



THE PLANKTON NEWS



THE NEWSLETTER OF THE SOUTH CAROLINA PHYTOPLANKTON MONITORING NETWORK

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July 2002

The Creation and Design of the South Carolina Phytoplankton Monitoring Network

Introduction

The South Carolina Phytoplankton Monitoring Network (SCPMN) commenced in January 2001. The purpose of SCPMN is to educate the public on harmful algal blooms (HABs) and perform coastal monitoring of potentially harmful and non-harmful plankton species.

continued on page 2

INSIDE THIS ISSUE	
1	The Creation and Design of the SCPMN
1	SCPMN Volunteer Groups
3	Xth International Harmful Algae Conference
3	Hollings Marine Laboratory
3	Results from the First Year of Monitoring
4	SCPMN Species List
5	Summer Refresher Course
5	Calendar of Events
6	SCPMN Web Site
6	Species Spotlight

SCPMN Volunteer Groups

During the first year of existence, the program has grown to include 19 schools, 9 citizen groups, and 4 park/recreational facilities. A total of 49 sample sites are sampled biweekly by current volunteers. Thanks go out to everyone for making this first year a success.

Who are SCPMN volunteers?

Beaufort County

School Groups: Hilton Head High School, Hilton Head Middle School, Lady's Island Middle School, Daufuskie Middle School, Whale Branch Middle School

Citizen Groups: Dataw Island and Hilton Head Island

Park Facilities: Hunting Island State Park, Pritchard's Island

Berkeley County

School Groups: Hanahan High School

Citizen Groups: Awendaw and McClellanville

Charleston County

School Groups: Ashley Hall, Bishop England, First Baptist Church School, Ft. Johnson Middle School, James Island Christian School, James Island High School, Mason Prep, Porter-Gaud, Schroder Middle School, Trident Academy, Wando High School, and West Ashley High School

Citizen Groups: Dewees Island, Folly Beach, Isle of Palms, James Island, and Seabrook Island

Park Facilities: Caw Caw Interpretive Center

Colleton County

Park Facilities: Edisto Beach State Park/Edisto Interpretive Center

continued on page 5

continued from page 1

The SCPMN is a component of the South Carolina Task Group on Harmful Algae. Members of this multidisciplinary group represent the National Oceanic and Atmospheric Administration (NOAA), the South Carolina Department of Health and Environmental Control (SCDHEC), the South Carolina Department of Natural Resources (SCDNR), the South Carolina Sea Grant Consortium, and the Medical University of South Carolina (MUSC). Some of the goals of this committee include: to identify sites with environmental conditions favorable for HAB formation in South Carolina, to assess the risks of HABs to human health, the environment, and the economy, and to develop educational and training materials. To learn more about the South Carolina Task Group on Harmful Algae, please visit their web site at <http://www.scseagrant.org/schab.htm>.

Meet the SCPMN Staff

Director

Dr. Steve Morton created SCPMN with the South Carolina Task Group on Harmful Algae in 2001. Dr. Morton has been a research oceanographer with the Marine Biotoxins Program since 1998.

Before coming to NOAA, Dr. Morton was the Curator of the Provasoli-Guillard National Center for Culture of Marine Phytoplankton, the United States' main depository for marine algae. During this time, Steve helped in the formation of the extremely successful Maine Phytoplankton Monitoring Network. The SCPMN is being modeled after the successful Maine program.

Steve's research interests include the taxonomy, ecology, culture, and physiology of toxin production by marine algae.

Coordinator

Kate Schaefer is the Coordinator of the SCPMN. Kate started in January 2001 when the program began. Her role in the program is to recruit and train new volunteers, to hold training sessions, to update training manuals, to visit sampling sites, and to communicate with volunteer groups on

their needs to keep the program running successfully. She has a background in chemistry, biology, marine sciences, and Geographic Information Systems (GIS)/Remote Sensing. Kate recently completed the Masters of Science in Environmental Studies at the University of Charleston.

Web Site Development

Kimberly Nowocin is the developer of the SCPMN web site. Kimberly has been with the Marine Biotoxins Program since 1999. She is responsible for the design of the SCPMN web site and the web site for the Marine Biotoxins Program (<http://www.chbr.noaa.gov/CoastalResearch>). Improvements to the SCPMN web site are currently under development. Kimberly recently completed the Bachelors of Science in Computer Science from the College of Charleston.

Welcome Aboard

Heather Blankenstein will be assisting with SCPMN and other outreach programs of the Marine Biotoxins Program. Heather has a background in oceanography and has served as an outreach coordinator for Maine Maritime Academy (MMA) on Discovery Voyage and the Maine Sea Grant Program. Heather recently completed the Bachelors of Science program in Marine Science from MMA.



Steve, Kimberly, Heather, and Kate

SUMMER REFRESHER COURSE

This summer we will be holding our first annual refresher course to keep our active volunteers involved as well as further their knowledge in this field. We will be examining a sample, discussing results from the first year, and considering any changes to the program. We look forward to working with you all again next year and seeing you this summer for this informative refresher course.

CALENDAR OF EVENTS

R/V FERREL OPEN HOUSE

PLACE: PIER ROMEO, OLD NAVY BASE, NORTH CHARLESTON, SOUTH CAROLINA

TIME: TBA

This is a day to reward our groups for all of their hard work in sampling and identifying algae by taking an Open House Tour of one of NOAA's Research Vessels, the *Ferrel*.

SUMMER REFRESHER COURSE

PLACE: HOLLINGS MARINE LABORATORY

TIME: AUGUST 6, 2002 FROM 4-6 PM

AUGUST 8, 2002 FROM 4-6 PM

AUGUST 12, 2002 FROM 4-6 PM

AUGUST 14, 2002 FROM 4-6 PM

Summer refresher courses to be scheduled to review and update volunteers on changes and what has happened with the SCPMN this year.

SUMMER INTRODUCTORY COURSE

PLACE: HOLLINGS MARINE LABORATORY

TIME: 1 SUMMER SESSION (TBA-AUGUST)

Introductory summer training for new volunteer groups.

Horry County

Schools: Socastee High School

Where do we need new groups?

The SCPMN is always looking for new groups. We are focusing on training more people in the following coastal counties to expand our volunteer network equally along the South Carolina coast. New volunteers are needed in Berkeley, Colleton, Dorchester, Georgetown, Jasper, and Horry Counties.

Know someone who would make a good SCPMN Volunteer?

Contact Kate



Training day with Allene Baran's Porter-Gaud Group

THE PLANKTON NEWS

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Steve Morton

Coordinator of SCPMN
Kate Schaefer

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SCPMN WEB SITE

www.chbr.noaa.gov/Coastal
Research/SCPMN/SCPMNmain.htm

The SCPMN web site is constantly being updated to make it more user friendly for all of our volunteers. Please visit the site often for more current information. For any questions or comments on the SCPMN web site, please contact site coordinator Kimberly Nowocin at (843) 762-8835 or Kimberly.Nowocin@noaa.gov.

Information to be added:

- Data collection
- Biographies of each participating school/group and group pictures
- GIS Database and layouts for a visual interpretation of data
- Current and back issues of THE PLANKTON NEWS
- On-line data entry
- Fact Sheets on Human Health Syndromes



Species Spotlight

Akashiwo sanguinea

Species Introduction

The dinoflagellate, *Akashiwo sanguinea*, has been on the SCPMN species list since the existence of the program last January. *A. sanguinea* is an athecate dinoflagellate and has been linked with fish mortality events due to low dissolved oxygen. This species is found in temperate to tropical estuarine and coastal waters.

Who found *Akashiwo sanguinea*?

Julie Cliff's Wando High School group first found *A. sanguinea* in September in Mt. Pleasant, South Carolina. This species was also seen in a three month long bloom at Caw Caw Interpretive Center from November 2001 to January 2002. *A. sanguinea* has been observed at several other SCPMN sampling sites in lower abundance.

*Be sure to check the next issue of THE
PLANKTON NEWS for another new "Species
Spotlight"!*

Kate Schaefer, Coordinator
South Carolina Phytoplankton Monitoring Network
NOAA/NOS/Marine Biotoxins Program
HOLLINGS MARINE LABORATORY
331 Fort Johnson Road
Charleston, SC 29412

Xth International Conference on Harmful Algae

Kate Schaefer and Steve Morton will be attending the Xth International Conference on Harmful Algae during October 21-25, 2002 in St. Petersburg, Florida. For more information on this conference, please visit the conference web site at <http://www.xhab2002.com>. The SCPMN staff has submitted two abstracts:

- *The Use of Volunteer Monitoring Networks to Monitor Phytoplankton*
- *Observation of Prorocentrum lima in South Carolina*

Thanks to all of the volunteers for their hard work to make these presentations possible.

Hollings Marine Laboratory

The staff of the SCPMN has recently moved to the new Hollings Marine Laboratory (HML) located on Ft. Johnson Road in Charleston, South Carolina. HML is a collaborative facility where teams of scientists from NOAA, South Carolina Department of Natural Resources (SCDNR), National Institute of Standards and Technology (NIST), Medical University of South Carolina (MUSC), and the College of Charleston will work together to answer complex environmental questions.

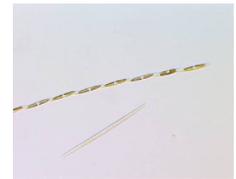


Hollings Marine Laboratory

Results from the First Year of Monitoring

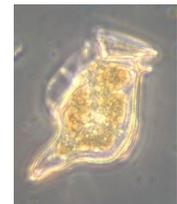
During the first year three potential toxic species and one known harmful species were observed by groups of the network. These species include *Pseudo-nitzschia*, *Dinophysis*, *Prorocentrum*, and *Akashimo*.

Pseudo-nitzschia →



This diatom produces a toxin called domoic acid. The human health syndrome associated with *Pseudo-nitzschia* is called Amnesic Shellfish Poisoning (ASP) and some of the human health complications include nausea, vomiting, disorientation, and permanent loss of short-term memory. *Pseudo-nitzschia* has been seen in rare to common abundance throughout Beaufort and Charleston counties.

Dinophysis caudata →



← *Prorocentrum lima*

Both of these species produce okadaic acid and are associated with the human health syndrome called Diarrhetic Shellfish Poisoning (DSP). DSP is found worldwide and some symptoms include severe gastrointestinal disorders such as nausea and vomiting. Both of these species have been seen in rare abundance in Charleston County.

Akashimo sanguinea

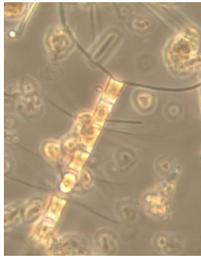
This species causes red tides and can be associated with fish kills. Turn to the "Species Spotlight" to learn more about *A. sanguinea* and to see a picture.

SCPMN Species List

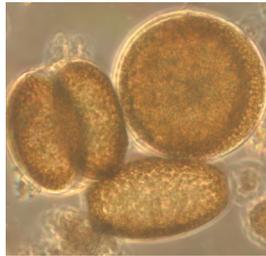
Use this insert page as a pull-out color identification key. These are microscope pictures for the species on the SCPMN species list. All pictures were taken at 200x magnification.

Diatoms

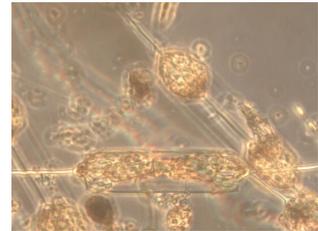
Chaetoceros



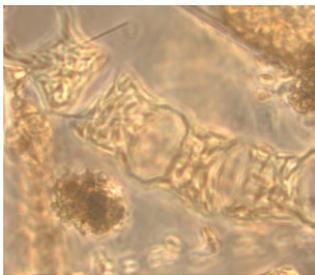
Coscinodiscus (3 views)



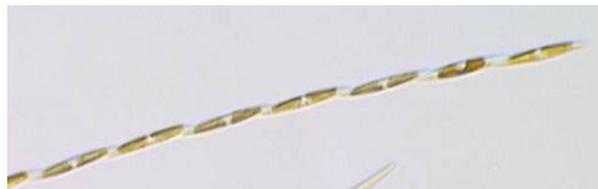
Ditylum (2)



Odontella



Pseudo-nitzschia

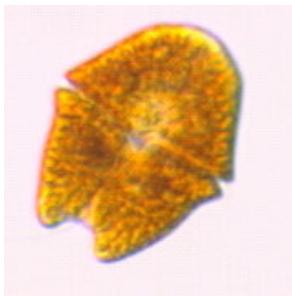


Rhizosolenia



Dinoflagellates

Akashiwo sanguinea



Ceratium (2 species)



Dinophysis



Karenia brevis



Prorocentrum micans



Protoperdinium

